



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. FAA-2014-1076; Special Conditions No. 25-607A-SC]

**Special Conditions:** Dassault Aviation Model Falcon 6X, Limit Pilot Forces—Side-Stick Controller.

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions; amendment.

**SUMMARY:** These special conditions are issued for the Dassault Aviation (Dassault) Model Falcon 6X airplane. This airplane will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport-category airplanes. This airplane is equipped with an electronic flight-control system that includes pilot controls through a side stick instead of through a conventional wheel or control stick. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** This action is effective on Dassault on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**FOR FURTHER INFORMATION CONTACT:** Todd Martin, Materials and Structural Properties Section, AIR-621, Technical Innovation Policy Branch, Policy and Innovation Division, Aircraft Certification Service, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington 98198; telephone and fax 206-231-3210; e-mail [todd.martin@faa.gov](mailto:todd.martin@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

On July 1, 2012, Dassault Aviation applied for a type certificate for their new Model Falcon 5X airplane. Special conditions were issued for that design on January 27, 2016 (81 FR 4579). However, Dassault has decided not to release an airplane under the model designation Falcon 5X, instead choosing to change that model designation to Falcon 6X.

In February of 2018, due to engine supplier issues, Dassault extended the type certificate application date for their Model Falcon 5X airplane under new Model Falcon 6X. This amendment to the original special conditions reflects the model-name change. This airplane is a twin-engine business jet with seating for 19 passengers and a maximum takeoff weight of 77,460 pounds. The Dassault Model Falcon 6X airplane design remains unchanged from the Model Falcon 5X in all material respects other than different engines.

### **Type Certification Basis**

Under the provisions of 14 CFR 21.17, Dassault must show that the Model Falcon 6X airplane meets the applicable provisions of part 25, as amended by Amendments 25-1 through 25-146.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Dassault Model Falcon 6X airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Dassault Model Falcon 6X airplane must comply with the fuel-vent and exhaust-emission

requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

### **Novel or Unusual Design Features**

The Dassault Model Falcon 6X airplane will incorporate the following novel or unusual design feature:

This airplane is equipped with an electronic flight-control system that includes pilot controls through a side stick instead of through a conventional wheel or control stick.

### **Discussion**

The Dassault Model Falcon 6X airplane is equipped with a side stick instead of a conventional wheel or control stick. The requirement of § 25.397(c), which defines limit pilot forces and torques, applies to conventional wheel or control stick and is therefore not adequate for this new side-stick design with electronic flight controls that affect maneuvering.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

### **Discussion of Comments**

The FAA issued Final Special Conditions, Request for Comment Special Conditions No. 25-607-SC for the Dassault Model Falcon 5X airplane, which was published in the *Federal Register* on January 27, 2016 (81 FR 4579). No comments were received, and the special conditions are adopted as proposed, with amendments.

### **Applicability**

As discussed above, these special conditions are applicable to the Dassault Model Falcon 6X airplane. Should Dassault apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well.

## Conclusion

This action affects only certain novel or unusual design features on one model of airplane. It is not a rule of general applicability.

## List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40113, 44701, 44702, 44704.

## The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued, in lieu of the aileron-control and elevator-control forces specified in § 25.397(c), as part of the type-certification basis for the Dassault Model Falcon 6X airplane.

For airplanes equipped with side-stick controls designed for forces to be applied by one wrist and not arms, the limit pilot forces are as follows.

1. For all components between and including the side-stick control-assembly handle and its control stops:

PITCH	ROLL
Nose up, 200 lbs force	Nose left, 100 lbs force
Nose down, 200 lbs force	Nose right, 100 lbs force

2. For all other components of the side-stick control assembly, but excluding the internal components of the electrical sensor assemblies, to avoid damage to the control system as the result of an in-flight jam:

PITCH	ROLL
Nose up, 125 lbs force	Nose left, 50 lbs force
Nose down, 125 lbs force	Nose right, 50 lbs force

Issued in Kansas City, Missouri, on March 18, 2022.

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